



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/598,736	06/21/2000	Toru Takayama	SEL 189	5820

7590 12/20/2001

Mark J Murphy
COOK ALEX MCFARRON MANZO CUMMINGS & MEHLER LTD
200 West Adams Street
Suite 2850
Chicago, IL 60606

EXAMINER

VU, HUNG K

ART UNIT PAPER NUMBER

2811

DATE MAILED: 12/20/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/598,736

Applicant(s)

TAKAYAMA ET AL.

Examiner

Hung K. Vu

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 53-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Invention of Group I, Claims 1-52, in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant's election without traverse of Invention of Group I, Claims 1-52, in Paper No. 7 is acknowledged.

Claims 53-63 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 7.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2811

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 5, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Oikawa et al. (PN 4,770,948).

Oikawa et al. discloses a wiring material (5) comprising tungsten or tungsten compound as a main constituent,

Wherein at least one inert element is include within the wiring material and argon is contained in the inert element at an amount equal to or greater than 90%, and

Wherein an amount of sodium contained within the wiring material is equal to or less than 0.3 ppm. Note Figures 1 and 2 of Oikawa et al..

With regard to claim 2, Oikawa et al. discloses wherein the tungsten compound is a chemical compound of : one element, or a plurality of elements, selected from the group consisting of Ta, Ti, Mo, Cr, Nb, and Si; and tungsten.

With regard to claim 4, Oikawa et al. discloses a lamination film of thin films selected from the group consisting of the metallic film, the metallic compound film, and the alloy film (upper and lower portion of 5).

With regard to claims 5 and 17, the term “formed by a sputtering method” is method recitations in a device claimed, and it is non-limiting, because only the final product is relevant, not the method of making. A product by process claim is directed to the product per se, no matter how

Art Unit: 2811

actually made. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6-15, and 18-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa et al. (PN 4,770,948).

With regard to claims 28 and 40, Oikawa et al. discloses all of the claimed limitation except the wiring having a lamination structure containing a silicon film having an added impurity element for imparting conductivity, a film having tungsten or a tungsten compound as a main constituent, and a nitride film of tungsten. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the wiring of Oikawa et al.'s having a lamination structure as claimed in order to prevent impurity from diffusing into the wiring.

With regard to claims 3, 9-11, 13, 21-23, 25, 33-35, 37, 45-47, 49, and 52, although Oikawa et al. does not teach the exact the resistivity, the resistance value, the inert stress, the line width, as that claimed by Applicants, the resistivity, the resistance value, the inert stress, the line width differences are considered obvious design choices because the resistivity, the resistance value,

Art Unit: 2811

the inert stress, or the line width is variable of importance subject to routine experimentation and optimization.

With regard to claims 29 and 41, the term "formed by a sputtering method" is method recitations in a device claimed, and it is non-limiting, because only the final product is relevant, not the method of making. A product by process claim is directed to the product per se, no matter how actually made. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

With regard to claims 12, 24, 36, and 48, Oikawa et al. discloses the wiring is used as a gate of the MOS. Oikawa et al. does not disclose the wiring is used as a gate of a TFT. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the wiring of Oikawa et al. as the gate for the TFT in order to increase the circuitry density.

With regard to claims 14, 15, 26, 27, 38, 39, 50, and 51, Oikawa et al. does not disclose the semiconductor device is an active matrix type liquid crystal display, an active matrix type EL display, or an active matrix type EC display, or a video camera, a digital camera, a projector, a goggle type display, a car navigation system, a personal computer, or a portable information terminal. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the device of Oikawa et al.'s into the devices as claimed in order to perform the desire function.

Art Unit: 2811

With regard to claims 6-8, 18-20, 30-32, 42-44, Oikawa et al. does not disclose other inert element (Xe or Kr) is contained within the wiring at an amount equal to or less than 0.1 atom%. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the wiring of Oikawa et al's having other inert element at an amount equal to or less than 0.1 atom% in order to control the crystal structure of the wiring so that the resistivity of the wiring would be reduced.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung K. Vu whose telephone number is (703) 308-4079. The examiner can normally be reached on Mon-Thurs 7:00-5:30, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Vu

December 14, 2001

Steven Loke
Primary Examiner

